

What is claimed is:

1. A reflector comprising a plurality of concave parts having light reflectivity formed on a metal film formed on a base material or on a surface of the base material,

5 wherein an inner surface of the concave part is formed of a surface that a peripheral curved surface being a part of aspheric surface is continued to a plane at a position surrounded by the peripheral curved surface,

each of the plurality of the concave parts has a specified
10 longitudinal section passing through a deepest point of the concave part,

a form of an inner surface of the specified longitudinal section is formed of a first curve from one peripheral part of the concave part to a deepest point thereof, a second curve
15 from the deepest point of the concave part to a first straight line continuously to the first curve, the first straight line to a third curve continuously to the second curve, and the third curve to an other peripheral part continuously to the first straight line,

20 a curvature radius of the second curve is greater than a curvature radius of the first curve, and

curvature radii of the second curve and the third curve are equal.

2. A reflector comprising a plurality of concave parts
25 having light reflectivity formed on a metal film formed on a base material or on a surface of the base material,

wherein an inner surface of the concave part is formed

of a surface that a peripheral curved surface being a part of spherical surface is continued to a plane at a position surrounded by the peripheral curved surface,

each of the plurality of the concave parts has a specified
5 longitudinal section passing through a deepest point of the concave part,

a form of an inner surface of the specified longitudinal section is formed of a first curve from one peripheral part of the concave part through a deepest point thereof to a first
10 straight line, the first straight line to a second curve continuously to the first curve, and the second curve to an other peripheral part continuously to the first straight line, and

curvature radii of the first curve and the second curve
15 are equal.

3. The reflector according to claim 1 or 2, wherein the form of the plane is a rectangular shape or arc shape seen in plan.

4. The reflector according to claim 1 or 2, wherein the plane is formed inside the concave part so as to be linesymmetric
20 to an line passing through the specified longitudinal section.

5. The reflector according to claim 1 or 2, wherein the plane is formed inside the concave part so as to be non-linesymmetric to an line passing through the specified longitudinal section.

6. The reflector according to claim 1 or 2, wherein a depth
25 of the concave part is formed irregularly in a range of 0.1 to 3 μm , and a pitch between the adjacent concave parts is disposed irregularly in a range of 2 to 50 μm in the plurality

of the concave parts.

7. The reflector according to claim 2, wherein the peripheral curved surface being a part of the spherical surface is formed to have a tilt angle distribution in a range of -35 to +35 degrees.

8. The reflector according to claim 1 or 2, wherein the reflector has a reflectance distribution asymmetric to a direct reflection angle of incident light, and also has a non-Gaussian distribution type reflectance property where a maximum value of reflectance is in a range of a reflection angle smaller than the direct reflection angle of the incident light.

9. The reflector according to claim 8, wherein a profile of a graph illustrating the reflectance distribution of the reflector is stepped, and the maximum value of the reflectance is at the top part of the stepped profile.

10. The reflector according to claim 1 or 2, wherein a thickness of the base material or the metal film of the reflector ranges from 8 to 20 nm.

11. A reflective liquid crystal display device comprising a liquid crystal cell in which an electrode and an alignment layer are sequentially disposed on an inner surface of one of substrates from a side of the one of the substrates, and an electrode and an alignment layer are sequentially disposed on an inner surface of the other of the substrates from the other of the substrates, the substrates face each other as sandwich a liquid crystal layer,

wherein the reflector according to claim 1 or 2 is

disposed on an outer surface of the one of the substrates or between the one of the substrates and the electrode disposed on the inner surface thereof.